89-11

U.S. Department of Labor
Program Highlights

Fact Sheet No. OSHA 89-11

CARBON MONOXIDE POISONING

WHAT IS IT?

Carbon monoxide--a colorless, odorless, tasteless gas--is one of the most common industrial hazards. Mild poisoning can cause such symptoms as nausea, dizziness or headaches while severe poisoning can result in brain or heart damage or even death.

This poisonous gas is produced by the incomplete burning of any material containing carbon, such as gasoline, natural gas, oil, propane, coal or wood. Forges, blast furnaces and coke ovens all produce carbon monoxide, but one of the most common sources of exposure in the workplace is the internal combustion engine.

Be suspicious of carbon monoxide poisoning if you develop headache, flushed face, dizziness or weakness. Bear in mind that although carbon monoxide has no telltale odor, it may mix with gases which do have an odor. Thus, the smell of other gases doesn't mean an absence of carbon monoxide.

ARE YOU LIKELY TO BE POISONED?

If you have a heart condition, you may be especially susceptible to carbon monoxide poisoning. Ingestion of barbiturates and alcohol may increase the gas' health effects.

Harmful levels of carbon monoxide are a potential danger to: acetylene workers, blast furnace workers, boiler room workers, brewery workers, carbon black makers, coke oven workers, customs workers, diesel engine operators, dock workers, garage mechanics, metal oxide reducers, miners, organic chemical synthesizers, petroleum refinery workers, pulp and paper workers, steel workers, toll booth and tunnel attendants, and warehouse workers.

HOW DOES CARBON MONOXIDE HARM YOU?

Large amounts of carbon monoxide can kill in minutes. The more carbon monoxide in the air and the longer you are exposed to it, the greater the danger. Any one or more of the following symptoms can signal carbon monoxide poisoning: headaches, tightness across the chest, nausea, drowsiness, inattention or fatigue. As the amount of carbon monoxide in the air increases, more serious symptoms develop such as lack of coordination, weakness and confusion.

The poisoning can be reversed if caught in time. But even if you recover, acute poisoning may result in permanent damage to the parts of your body which require a lot of oxygen such as the heart and brain.

WHAT CAN YOU DO ABOUT CARBON MONOXIDE?

If you suspect carbon monoxide, get out of the area into the open fresh air. Remove anyone overcome by the gas immediately and give the person artificial respiration. Call for a doctor and continue the artificial respiration until the doctor arrives or the person recovers. Prompt action can make the difference between life and death.

HOW CAN POISONING BE PREVENTED?

Suggestions for Employers

1. Install an effective ventilation system to remove poisonous carbon monoxide from the area.

2. Maintain appliances and equipment in good order, adjusting flames, burners and drafts to

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reduce the formation of carbon monoxide.

3. Consider switching from gasoline-powered equipment to battery-powered machinery when possible.

4. Provide approved respirators for emergency use; if necessary, provide an independent air supply to workers.

5. Regularly test air in areas when carbon monoxide is generated or used.

6. Provide preplacement and periodic medical examinations for workers who may be exposed to carbon monoxide. If possible, transfer affected workers to other jobs.

7. Instruct workers in the hazards of carbon monoxide and train them in the proper use of respirators.

Suggestions for Workers

1. Report to your employer any condition which might make carbon monoxide form or accumulate.

2. Be alert to ventilation problems, especially in enclosed areas where gases of burning fuels may be released.

3. Report complaints early. Don't overexert yourself if you suspect carbon monoxide poisoning. Physical activity increases the body's need for oxygen and thus increases the danger of poisoning.

4. If you get sick, don't forget to tell your doctor about the possibility of exposure to carbon monoxide.

5. Think carefully about your smoking habits. Tobacco, when burned, releases carbon monoxide which reduces the oxygen-carrying ability of the blood, even before any industrial exposure is added.

WHAT ARE THE FEDERAL STANDARDS?

The Occupational Safety and Health Administration standard for exposure to carbon monoxide prohibits workers' exposure to more than 35 parts of the gas per million parts of air (ppm), averaged over an 8-hour workday. There is also a ceiling limit of 200 ppm (as measured over a 15-minute period).

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